

Fishery Conservation and Management

Pt. 660, Subpt. C, Table 2a

TABLE 2a TO PART 660, SUBPART C—2012, AND BEYOND, SPECIFICATIONS OF OFL, ABC, ACL, ACT AND FISHERY HARVEST GUIDELINES (WEIGHTS IN METRIC TONS)

Table 2a. To Part 660, Subpart C - 2012, and beyond, Specifications of OFL, ABC, ACL, ACT and Fishery Harvest guidelines(weights in metric tons).

Species	Area	OFL	ABC	ACL a/	ACT	Fishery HG
ROUND FISH:						
Lingcod	N of 42° N. lat. b/	2,251	2,151	2,151		1,880
	S of 42° N. lat. c/	2,597	2,164	2,164		2,157
Pacific Cod d/	Coastwide	3,200	2,222	1,600		1,200
Pacific Whiting e/	Coastwide	e/	e/	e/		135,481
Sablefish	N of 36° N. lat. f/	8,623	8,242	5,347	See Table 2c	
	S of 36° N. lat. g/			1,258		1,224
Cabazon	46°16' to 42° N. lat. h/	50	48	48		48
	S of 42° N. lat. i/	176	168	168		168
FLATFISH:						
Dover sole j/	Coastwide	44,826	42,843	25,000		23,410
English sole k/	Coastwide	10,620	10,150	10,150		10,050
Petrale sole l/	Coastwide	1,279	1,222	1,160		1094.6
Arrowtooth flounder m/	Coastwide	14,460	12,049	12,049		9,971
Starry Flounder n/	Coastwide	1,813	1,511	1,360		1,353
Other flatfish o/	Coastwide	10,146	7,044	4,884		4,686
ROCKFISH:						
Pacific Ocean Perch p/	N of 40°10' N. lat.	1,007	962	183	157	144.1
Shortbelly q/	Coastwide	6,950	5,789	50		49
Widow r/	Coastwide	4,923	4,705	600		539.1
Canary s/	Coastwide	622	594	107		81
Chillipepper t/	S of 40°10' N. lat.	1,872	1,789	1,789		1,774
Bocaccio u/	S of 40°10' N. lat.	732	700	274		260.6
Splitnose v/	S of 40°10' N. lat.	1,610	1,538	1,538		1,531
Yellowtail w/	N of 40°10' N. lat.	4,573	4,371	4,371		3,872
Shortspine thornyhead x/	N of 34°27' N. lat.	2,358	2,254	1,556		1,511
	S of 34°27' N. lat.			401		359
Longspine thornyhead y/	N of 34°27' N. lat.	3,483	2,902	2,064		2,020
	S of 34°27' N. lat.			366		363
Cowcod z/	S of 40°10' N. lat.	13	10	3		2.7
Darkblotched aa/	Coastwide	497	475	296		277.3
Yelloweye bb/	Coastwide	48	46	17		11.1
California Scorpionfish cc/	S. of 34°27' N. lat.	132	126	126		124
Black	N of 46°16' N. lat. dd/	435	415	415		401
	S of 46°16' N. lat. ee/	1,169	1,117	1,000		1,000
Minor Rockfish North ff/	Coastwide	3,820	3,414	2,227		2,116
Nearshore	N of 40°10' N. lat.	116	99	99		99
Shelf		2,197	1,948	968		925
Slope		1,507	1,367	1,160		1,092
Minor Rockfish South gg/	Coastwide	4,291	3,712	2,341		2,290
Nearshore	S of 40°10' N. lat.	1,145	990	990		990
Shelf		2,243	1,890	714		701
Slope		903	832	626		599
SHARKS/SKATES/RATFISH/MORID						
Longnose Skate hh/	Coastwide	3,006	2,873	1,349		1,220
Other fish ii/	Coastwide	11,150	7,742	5,575		5,575

a/ ACLs and HGs are specified as total catch values. isherly harvest guideline (HG) means the harvest guideline or quota after subtracting from the ACL of ACT any allocation for the Pacific Coast treaty Indian tribes, projected research catch, deductions for fishing mortality in non-groundfish fisheries, as necessary, and set-asides for EFPs.

b/ Lingcod north (Oregon and Washington). A new lingcod stock assessment was prepared in 2009. The lingcod north biomass was estimated to be at 62 percent of its unfished biomass in 2009. The OFL of 2,251 mt was calculated using an F_{MSY} proxy of $F_{45\%}$. The ABC of 2,151 mt was based on a 4 percent reduction from the OFL ($\sigma=0.36/P^*=0.45$) as it's a category 1 species. Because the stock is above $B_{40\%}$ coastwide, the ACL is set equal to the ABC. ACL is further reduced for the Tribal

fishery (250 mt), incidental open access fishery (16 mt) and research catch (5 mt), resulting in a fishery HG of 1,880 mt.

c/ Lingcod south (California). A new lingcod stock assessment was prepared in 2009. The lingcod south biomass was estimated to be at 74 percent of its unfished biomass in 2009. The OFL of 2,597 mt was calculated using an F_{MSY} proxy of $F_{45\%}$. The ABC of 2,164 mt was based on a 17 percent reduction from the OFL ($\sigma=0.72/P*=0.40$) as it's a category 2 species. Because the stock is above $B_{40\%}$ coastwide, the ACL is set equal to the ABC. An incidental open access set-aside of 7 mt is deducted from the ACL, resulting in a fishery HG of 2,157 mt.

d/ Pacific Cod. The 3,200 mt OFL is based on the maximum level of historic landings. The ABC of 2,222 mt is a 31 percent reduction from the OFL ($\sigma=1.44/P*=0.40$) as it's a category 3 species. The 1,600 mt ACL is the OFL reduced by 50 percent as a precautionary adjustment. A set-aside of 400 mt is deducted from the ACL for the Tribal fishery, resulting in a fishery HG of 1,200 mt.

e/ Pacific whiting. The most recent stock assessment was prepared in January 2012. The 2012 Fishery Harvest Guideline (Fishery HG) is calculated as follows. U.S. TAC of 186,037 mt minus 48,556 mt for the Tribal allocation minus 2000 mt for catch in research activities and as non-groundfish bycatch, resulting in a fishery harvest guideline of 135,481 mt. The TAC for Pacific whiting is established under the provisions of the Pacific Hake/Whiting Agreement with Canada and the Pacific Whiting Act of 2006, 16 U.S.C. 7001-7010, and the international exception applies. Therefore, no OFL, ACL, or ACT values are provided for Pacific whiting.

f/ Sablefish north. A coastwide sablefish stock assessment was prepared in 2007. The coastwide sablefish biomass was estimated to be at 38.3 percent of its unfished biomass in 2007. The coastwide OFL of 8,623 mt was based on the 2007 stock assessment with a F_{MSY} proxy of $F_{45\%}$. The ABC of 8,242 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. The 40-10 harvest policy was applied to the ABC to derive the coastwide ACL and then the ACL was apportioned north and south of 36° N. lat, using the average of annual swept area biomass (2003-2008) from the NMFS NWFSC trawl survey, between the northern and southern areas with 68 percent going to the area north of 36° N. lat. and 32 percent going to the area south of 36° N. lat. The northern portion of the ACL is 5,347 mt and is reduced by 535 mt for the tribal allocation (10 percent of the ACL north of 36° N. lat.) The 535 mt tribal allocation is reduced by 1.5 percent to account for discard mortality. Detailed sablefish allocations are shown in Table 2c.

g/ Sablefish South. That portion of the coastwide ACL (32 percent) apportioned to the area south of 36° N. lat. is 2,516 mt. An additional 50 percent reduction for uncertainty was made, resulting in an ACL of 1,258 mt. A set-aside of 34 mt is deducted from the ACL for EFP catch (26 mt), the incidental open access fishery (6 mt) and research catch (2 mt), resulting in a fishery HG of 1,224 mt.

h/ Cabezon (Oregon). A new cabezon stock assessment was prepared in 2009. The cabezon biomass in Oregon was estimated to be at 51 percent of its unfished biomass in 2009. The OFL of 50 mt was calculated using an F_{MSY} proxy of $F_{45\%}$. The ABC of 48 mt was based on a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. Because the

stock is above $B_{40\%}$ coastwide, the ACL is set equal to the ABC. No set-asides were removed so the fishery HG is also equal to the ACL at 48 mt. Cabezon in waters off Oregon were removed from the "other fish" complex, while cabezon of Washington will continue to be managed within the "other fish" complex.

i/ Cabezon (California) - A new cabezon stock assessment was prepared in 2009. The cabezon south biomass was estimated to be at 48 percent of its unfished biomass in 2009. The OFL of 176 mt was calculated using an F_{MSY} proxy of $F_{45\%}$. The ABC of 168 mt was based on a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. Because the stock is above $B_{40\%}$ coastwide, the ACL is set equal to the ABC. No set-asides were removed so the fishery HG is also equal to the ACL at 168 mt.

j/ Dover sole. A 2005 Dover sole assessment estimated the stock to be at 63 percent of its unfished biomass in 2005. The OFL of 44,826 mt is based on the results of the 2005 stock assessment with an F_{MSY} proxy of $F_{30\%}$. The ABC of 42,843 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. Because the stock is above $B_{25\%}$ coastwide, the ACL could be set equal to the ABC. However, the ACL of 25,000 mt is set at a level below the ABC and higher than the maximum historical landed catch. A set-aside of 1,590 mt is deducted from the ACL for the Tribal fishery (1,497 mt), the incidental open access fishery (55 mt) and research catch (38 mt), resulting in a fishery HG of 23,410 mt.

k/ English sole. A stock assessment update was prepared in 2007 based on the full assessment in 2005. The stock was estimated to be at 116 percent of its unfished biomass in 2007. The OFL of 10,620 mt is based on the results of the 2007 assessment update with an F_{MSY} proxy of $F_{30\%}$. The ABC of 10,150 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. Because the stock is above $B_{25\%}$, the ACL was set equal to the ABC. A set-aside of 100 mt is deducted from the ACL for the Tribal fishery (91 mt), the incidental open access fishery (4 mt) and research catch (5 mt), resulting in a fishery HG of 10,050 mt.

l/ Petrale sole. A petrale sole stock assessment was prepared for 2009. In 2009 the petrale sole stock was estimated to be at 12 percent of its unfished biomass coastwide, resulting in the stock being declared as overfished. The OFL of 1,279 mt is based on the 2009 assessment with a $F_{30\%}$ F_{MSY} proxy. The ABC of 1,222 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. The 1,160 mt ACL is represents an SPR harvest rate of 32.4 percent. A set-aside of 65 mt is deducted from the ACL for the Tribal fishery (45.4 mt), the incidental open access fishery (1 mt), EFP catch (2 mt) and research catch (17 mt), resulting in a fishery HG of 1,094.6 mt.

m/ Arrowtooth flounder. The stock was last assessed in 2007 and was estimated to be at 79 percent of its unfished biomass in 2007. The OFL of 14,460 mt is based on the 2007 assessment with a $F_{30\%}$ F_{MSY} proxy. The ABC of 12,049 mt is a 17 percent reduction from the OFL ($\sigma=0.72/P*=0.40$) as it's a category 2 species. Because the stock is above $B_{25\%}$, the ACL is set equal to the ABC. A set-aside of 2,078 mt is deducted from the ACL for the Tribal fishery (2,041 mt), the incidental open access fishery (30 mt), and research catch (7 mt), resulting in a fishery HG of 9,971 mt.

n/ Starry Flounder. The stock was assessed for the first time in 2005 and was estimated to be above 40 percent of its unfished biomass in 2005. For 2012, the coastwide OFL of 1,813 mt is based on the 2005 assessment with a F_{MSY} proxy of $F_{30\%}$. The ABC of 1,511 mt is a 17 percent reduction from the OFL ($\sigma=0.72/P*=0.40$) as it's a category 2 species. Because the stock is above $B_{25\%}$, the ACL could have been set equal to the ABC. As a precautionary measure, the ACL of 1,360 mt, is a 25 percent reduction from the OFL, which is a 10 percent reduction from the ABC. A set-aside of 7 mt is deducted from the ACL for the Tribal fishery (2 mt) and the incidental open access fishery (5 mt), resulting in a fishery HG of 1,353 mt.

o/ "Other flatfish" are the unassessed flatfish species that do not have individual OFLs/ABC/ACLs and include butter sole, curlfin sole, flathead sole, Pacific sand dab, rex sole, rock sole, and sand sole. The other flatfish OFL of 10,146 mt is based on the summed contribution of the OFLs determined for the component stocks. The ABC of 7,044 mt is a 31 percent reduction from the OFL ($\sigma=1.44/P*=0.40$) as all species in this complex are category 3 species. The ACL of 4,884 mt is equivalent to the 2010 OY, because there have been no significant changes in the status or management of stocks within the complex. A set-aside of 198 mt is deducted from the ACL for the Tribal fishery (60 mt), the incidental open access fishery (125 mt), and research catch (13 mt), resulting in a fishery HG of 4,686 mt.

p/ POP. A POP stock assessment update was prepared in 2009, based on the 2003 full assessment, and the stock was estimated to be at 29 percent of its unfished biomass in 2009. The OFL of 1,007 mt for the Vancouver and Columbia areas is based on the 2009 stock assessment update with an $F_{50\% F_{MSY}}$ proxy. The ABC of 962 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. The ACL of 183 mt is based on a rebuilding plan with a target year to rebuild of 2020 and an SPR harvest rate of 86.4 percent. An ACT of 157 mt is being established to address management uncertainty and increase the likelihood that total catch remains within the ACL. A set-aside of 12.9 mt is deducted from the ACT for the Tribal fishery (10.9 mt), the incidental open access fishery (0.1 mt), EFP catch (0.1 mt) and research catch (1.8 mt), resulting in a fishery HG of 144.1 mt.

q/ Shortbelly rockfish. A non quantitative assessment was conducted in 2007. The spawning stock biomass of shortbelly rockfish was estimated at 67 percent of its unfished biomass in 2005. The OFL of 6,950 mt was recommended for the stock in 2012 with an ABC of 5,789 mt ($\sigma=0.72$ with a P^* of 0.40). The 50 mt ACL is slightly higher than recent landings, but much lower than previous OYs in recognition of the stock's importance as a forage species in the California Current ecosystem. A set-aside of 1 mt is deducted from the ACL for research catch, resulting in a fishery HG of 49 mt.

r/ Widow rockfish. The stock was assessed in 2009 and was estimated to be at 39 percent of its unfished biomass in 2009. The OFL of 4,923 mt is based on the 2009 stock assessment with an $F_{50\% F_{MSY}}$ proxy. The ABC of 4,705 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. A constant catch of 600 mt, which corresponds to an SPR harvest rate of 91.3 percent in 2012, will be used to rebuild consistent with the rebuilding plan and a target year to rebuild of 2010. A set-aside of 60.9 mt is deducted from the ACL for the Tribal fishery (45 mt), the incidental open access fishery (3.3 mt), EFP catch

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(11 mt) and research catch (1.6 mt), resulting in a fishery HG of 539.1 mt.

s/ Canary rockfish. A canary rockfish stock assessment update was completed in 2009, based on the full assessment in 2007, and the stock was estimated to be at 23.7 percent of its unfished biomass coastwide in 2009. The coastwide OFL of 622 mt is based on the new assessment with a F_{MSY} proxy of $F_{50\%}$. The ABC of 594 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P^*=0.45$) as it's a category 1 species. The ACL of 107 mt is based on a rebuilding plan with a target year to rebuild of 2027 and a SPR harvest rate of 88.7 percent. A set-aside of 20 mt is deducted from the ACL for the Tribal fishery (9.5 mt), the incidental open access fishery (2 mt), EFP catch (1.3 mt) and research catch (7.2 mt), resulting in a fishery HG of 87 mt. Recreational HGs are being specified as follows: Washington recreational, 2 mt; Oregon recreational 7 mt; and California recreational 14.5 mt.

t/ Chilipepper rockfish. The coastwide chilipepper stock was assessed in 2007 and estimated to be at 71 percent of its unfished biomass coastwide in 2006. Given that chilipepper rockfish are predominantly a southern species, the stock is managed with stock-specific harvest specifications south of 40°10' N. lat. and within minor shelf rockfish north of 40°10' N. lat. South of 40°10' N. lat., the OFL of 1,872 mt is based on the 2007 assessment with an F_{MSY} proxy of $F_{50\%}$. The ABC of 1,789 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P^*=0.45$) as it's a category 1 species. Because the biomass is estimated to be above 40 percent of the unfished biomass, the ACL was set equal to the ABC. The ACL is reduced by the incidental open access fishery (5 mt), and research catch (9 mt), resulting in a fishery HG of 1,774 mt.

u/ Bocaccio. A bocaccio stock assessment was prepared in 2009 from Cape Mendocino to Cape Blanco (43° N. lat.). Bocaccio rockfish are managed with stock-specific harvest specifications south of 40°10' N. lat. and within minor shelf rockfish north of 40°10' N. lat. The bocaccio stock was estimated to be at 28 percent of its unfished biomass in 2009. The OFL of 732 mt is based on the new stock assessment with an F_{MSY} proxy of $F_{50\%}$. The ABC of 700 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P^*=0.45$) as it's a category 1 species. The 274 mt ACL is based on a rebuilding plan with a target year to rebuild of 2022 and a SPR harvest rate of 77.7 percent. A set-aside of 13.4 mt is deducted from the ACL for the incidental open access fishery (0.7 mt), EFP catch (11 mt) and research catch (1.7 mt), resulting in a fishery HG of 260.6 mt.

v/ Splitnose rockfish. A new coastwide assessment was prepared in 2009 that estimated the stock to be at 66 percent of its unfished biomass in 2009. Splitnose in the north is managed under the minor slope rockfish complex and in the south (south of 40°10' N. lat.), with species-specific harvest specifications. The 1,610 mt OFL south of 40°10' N. lat. is based on the 2009 assessment with an F_{MSY} proxy of $F_{50\%}$. The ABC of 1,538 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P^*=0.45$) as it's a category 1 species. Because the unfished biomass is estimated to be above 40 percent of the unfished biomass, the ACL is set equal to the ABC. A set-aside of 7 mt is deducted from the ACL for research catch, resulting in a fishery HG of 1,531 mt.

w/ Yellowtail rockfish. A yellowtail rockfish stock assessment was last prepared in 2005 for the Vancouver, Columbia, Eureka areas. Yellowtail rockfish was estimated to be at 55 percent of its unfished biomass in

2005. The OFL of 4,573 mt is based on the 2005 stock assessment with the F_{MSY} proxy of $F_{50\%}$. The ABC of 4,371 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. The ACL was set equal to the ABC, because the stock is above $B_{40\%}$. A set-aside of 499 mt is deducted from the ACL for the Tribal fishery (490 mt), the incidental open access fishery (3 mt), EFP catch (2 mt) and research catch (4 mt), resulting in a fishery HG of 3,872 mt.

x/ Shortspine thornyhead. A coastwide stock assessment was conducted in 2005 and the stock was estimated to be at 63 percent of its unfished biomass in 2005. A coastwide OFL of 2,358 mt is based on the 2005 stock assessment with a $F_{50\%}$ F_{MSY} proxy. The coastwide ABC of 2,254 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. For the portion of the stock that is north of 34°27' N. lat., the ACL is 1,556 mt, 66 percent of the coastwide OFL. A set-aside of 45 mt is deducted from the ACL for the Tribal fishery (38 mt), the incidental open access fishery (2 mt), and research catch (5 mt), resulting in a fishery HG of 1,511 mt for the area north of 34°27' N. lat. For that portion of the stock south of north of 34°27' N. lat. the ACL is 401 mt which is 34 percent of the coastwide OFL for the portion of the biomass found south of 34°27' N. lat reduced by 50 percent as a precautionary adjustment. A set-aside of 42 mt is deducted from the ACL for the incidental open access fishery (41 mt), and research catch (1 mt), resulting in a fishery HG of 359 mt for the area south of 34°27' N. lat. The sum of the northern and southern area ACLs (1,957 mt) is a 13 percent reduction from the coastwide ABC.

y/ Longspine thornyhead. A coastwide stock assessment was conducted in 2005 and the stock was estimated to be at 71 percent of its unfished biomass in 2005. A coastwide OFL of 3,483 mt is based on the 2005 stock assessment with a $F_{50\%}$ F_{MSY} proxy. The ABC of 2,902 mt is a 17 percent reduction from the OFL ($\sigma=0.72/P*=0.40$) as it's a category 2 species. For the portion of the stock that is north of 34°27' N. lat., the ACL is 2,064 mt, and is 79 percent of the coastwide OFL for the biomass in that area. A set-aside of 44 mt is deducted from the ACL for the Tribal fishery (30 mt), the incidental open access fishery (1 mt), and research catch (13 mt), resulting in a fishery HG of 2,020 mt. For that portion of the stock south of 34°27' N. lat. the ACL is 366 mt and is 21 percent of the coastwide OFL reduced by 50 percent as a precautionary adjustment. A set-aside of 3 mt is deducted from the ACL for the incidental open access fishery (2 mt), and research catch (1 mt), resulting in a fishery HG of 363 mt. The sum of the northern and southern area ACLs (2,430 mt) is a 16 percent reduction from the coastwide ABC.

z/ Cowcod. A stock assessment update was prepared in 2009 and the stock was estimated to be 5 percent bounded between 4 and 21 percent of its unfished biomass in 2009. The OFLs for the Monterey and Conception areas were summed to derive the south of 40°10' N. lat. OFL of 13 mt. The ABC for the area south of 40°10' N. lat. is 10 mt. The assessed portion of the stock in the Conception Area was considered category 2, with a Conception Area contribution to the ABC of 5 mt, which is a 17 percent reduction from the OFL ($\sigma=0.72/P*=0.35$). The unassessed portion of the stock in the Monterey area was considered a category 3 stock, with a contribution to the ABC of 5 mt, which is a 29 percent reduction from the OFL ($\sigma=1.44/P*=0.40$). A single ACL of 3 mt is being set for both areas combined. The ACL of 3 mt is based on a rebuilding plan with

a target year to rebuild of 2068 and an SPR rate of 82.7 percent. The amount anticipated to be taken during research activity is 0.1 mt and the amount expected to be taken during EFP activity is 0.2 mt, which results in a fishery HG of 2.7 mt.

aa/ Darkblotched rockfish. A stock assessment update was prepared in 2009, based on the 2007 full assessment, and the stock was estimated to be at 27.5 percent of its unfished biomass in 2009. The OFL is projected to be 497 mt and is based on the 2009 stock assessment with an F_{MSY} proxy of $F_{50\%}$. The ABC of 475 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. The ACL of 296 mt is based on a rebuilding plan with a target year to rebuild of 2025 and an SPR harvest rate of 64.9 percent. A set-aside of 18.7 mt is deducted from the ACL for the Tribal fishery (0.1 mt), the incidental open access fishery (15 mt), EFP catch (1.5) and research catch (2.1 mt), resulting in a fishery HG of 277.3 mt.

bb/ Yelloweye rockfish. The stock was assessed in 2009 and was estimated to be at 20.3 percent of its unfished biomass in 2009. The 48 mt coastwide OFL was derived from the base model in the new stock assessment with an F_{MSY} proxy of $F_{50\%}$. The ABC of 46 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. The 17 mt ACL is based on a rebuilding plan with a target year to rebuild of 2074 and an SPR harvest rate of 76 percent. A set-aside of 5.9 mt is deducted from the ACL for the Tribal fishery (2.3 mt), the incidental open access fishery (0.2 mt), EFP catch (0.1 mt) and research catch (3.3 mt) resulting in a fishery HG of 11.1 mt. Recreational HGs are being established as follows: Washington recreational, 2.6; Oregon recreational 2.4 mt; and California recreational 3.1 mt.

cc/ California Scorpionfish south was assessed in 2005 and was estimated to be at 80 percent of its unfished biomass in 2005. The OFL of 132 mt is based on the new assessment with a harvest rate proxy of $F_{50\%}$. The ABC of 126 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. Because the stock is above $B_{40\%}$, the ACL is set equal to the ABC. A set-aside of 2 mt is deducted from the ACL for the incidental open access fishery, resulting in a fishery HG of 124 mt.

dd/ Black rockfish north (Washington). A stock assessment was prepared in 2007 for black rockfish north of 45°56'N. lat. (Cape Falcon, Oregon). The biomass in this area was estimated to be at 53 percent of its unfished biomass in 2007. The OFL from the assessed area is based on the 2007 assessment with a harvest rate proxy of $F_{50\%}$. The resulting OFL for the area north of 46°16' N. lat. (the Washington/Oregon border) is 435 mt, which is 97 percent of the OFL from the assessed area. The ABC of 415 mt for the area north of 46°16' N. lat. is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. The ACL was set equal to the ABC, since the stock is above $B_{40\%}$. A set-aside of 14 mt for the Tribal fishery results in a fishery HG of 401 mt.

ee/ Black rockfish south (Oregon and California). A 2007 stock assessment was prepared for black rockfish south of 45°56' N. lat. (Cape Falcon, Oregon) to the southern limit of the stock's distribution in Central California. The biomass in the south was estimated to be at 70 percent of its unfished biomass in 2007. The OFL from the assessed area is based on the 2007 assessment with a harvest rate proxy of $F_{50\%}$. Three

percent of the OFL from the stock assessment prepared for black rockfish north of 45°56' N. lat. is added to the OFL from the assessed area south of 45°56'. The resulting OFL for the area south of 46°16' N. lat. is 1,169 mt. The ABC of 1,117 mt for the south is a 4 percent reduction from the OFL ($\sigma=0.36/P^*=0.45$) as it's a category 1 species. The ACL was set at 1,000 mt, which is a constant catch strategy designed to keep the stock biomass above $B_{40\%}$. The black rockfish ACL in the area south of 46°16' N. lat., is subdivided with separate HGs being set for the area north of 42° N. lat. (580 mt/58 percent) and for the area south of 42° N. lat. (420 mt/42 percent).

ff/ Minor rockfish north is comprised of three minor rockfish sub-complexes: nearshore, shelf, and slope. The OFL of 3,820 mt is the sum of OFLs for nearshore (116 mt), shelf (2,197 mt) and slope (1,507 mt) north sub-complexes. Each sub-complex OFL is the sum of the OFLs of the component species within the complex. The ABCs for the minor rockfish complexes and sub-complexes are based on a sigma value of 0.36 for category 1 stocks (splitnose and chilipepper rockfish), 0.72 for category 2 stocks (greenstriped rockfish and blue rockfish in California) and 1.44 for category 3 stocks (all others) with a P^* of 0.45. The resulting minor rockfish north ABC, which is the summed contribution of the ABCs for the contributing species in each sub-complex (nearshore, shelf, and slope) is 3,414 mt. The ACL of 2,227 mt for the complex is the sum of the sub-complex ACLs. The sub-complex ACLs are the sum of the component stock ACLs, which are less than or equal to the ABC contribution of each component stock. There are no set-asides for the nearshore sub-complex, thus the fishery HG is equal to the ACL, which is 99 mt. The set-aside for the shelf sub-complex is 43 mt - Tribal fishery (9 mt), the incidental open access fishery (26 mt), EFP catch (4 mt) and research catch (4 mt), resulting in a shelf fishery HG of 925 mt. The set-aside for the slope sub-complex is 68 mt - Tribal fishery (36 mt), the incidental open access fishery (19 mt), EFP catch (2) and research catch (11 mt), resulting in a slope fishery HG of 1,092 mt.

gg/ Minor rockfish south is comprised of three minor rockfish sub-complexes: nearshore, shelf, and slope. The OFL of 4,291 mt is the sum of OFLs for nearshore (1,145 mt), shelf (2,243 mt) and slope (903 mt) south sub-complexes. Each sub-complex OFL is the sum of the OFLs of the component species within the complex. The ABCs for the minor rockfish complexes and sub-complexes are based on a sigma value of 0.36 for category 1 stocks (gopher rockfish north of Point Conception, blackgill), 0.72 for category 2 stocks (blue rockfish in the assessed area, greenstriped rockfish, and bank rockfish) and 1.44 for category 3 stocks (all others) with a P^* of 0.45. The resulting minor rockfish south ABC, which is the summed contribution of the ABCs for the contributing species in each sub-complex, is 3,712 mt. The ACL of 2,341 mt for the complex is the sum of the sub-complex ACLs. The sub-complex ACLs are the sum of the component stock ACLs, which are less than or equal to the ABC contribution of each component stock. There are no set-asides for the nearshore sub-complex, thus the fishery HG is equal to the ACL, which is 990 mt. The set-asides for the shelf sub-complex is 13 mt for the incidental open access fishery (9 mt), EFP catch (2 mt) and research catch (2 mt), resulting in a shelf fishery HG of 701 mt. The set-asides for the slope sub-complex is 27 mt for the incidental open access fishery (17 mt), EFP catch (2 mt) and research catch (8 mt), resulting in a slope fishery HG of 599 mt.

hh/ Longnose skate. A stock assessment update was prepared in 2007 and the stock was estimated to be at 66 percent of its unfished biomass. The OFL of 3,006 mt is based on the 2007 stock assessment with an F_{MSY} proxy of $F_{45\%}$. The ABC of 2,873 mt is a 4 percent reduction from the OFL ($\sigma=0.36/P*=0.45$) as it's a category 1 species. The ACL of 1,349 is the 2010 OY and represents a 50 percent increase in the average 2004-2006 catch mortality (landings and discard mortality). The set-asides for longnose skate is 129 mt for the tribal fishery (56 mt), incidental open access fishery (65 mt), and research catch (8 mt), resulting in a fishery HG of 1,220 mt.

ii/ "Other fish" contains all unassessed groundfish FMP species that are neither rockfish (family Scorpaenidae) nor flatfish. These species include big skate, California skate, leopard shark, soupfin shark, spiny dogfish, finescale codling, Pacific rattail, ratfish, cabezon off Washington, and kelp greenling. The OFL of 11,150 mt is the 2010 MSY harvest level minus the 50 mt contribution made for cabezon off Oregon, which is a newly assessed stock to be managed with stock-specific specifications. The ABC of 7,742 mt is a 31 percent reduction from the OFL ($\sigma=1.44/P*=0.40$) as all of the stocks in the "other fish" complex are category 3 species. The ACL of 5,575 mt is equal to the 2010 OY, minus half of the OFL contribution for Cabezon off of Oregon (25 mt). The fishery HG is equal to the ACL.

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